

REMARKS

These remarks are in response to the Office Action mailed October 20, 2003. The Office Action rejected pending claims 4-9, 11, 12, 17-27, and 29-36 and allowed claims 12 and 28. The Applicant thanks the Examiner for indicating the allowability of these claims and for also reversing the finality of the Office Action. All of claims 4-9, 11, 12, 17-27, and 29-36 were rejected under 35 U.S.C. 103(a) with Yekutiely, U.S. patent number 5,526,408, as the primary reference. For the reasons given below, it is respectfully submitted that these rejections are in error.

The Office Action is correct in that the newly introduced Yekutiely reference utilizes a bi-directional interface; however, as is clear from Figures 1 and 2 of Yekutiely this interface specifically includes distinct audio-in port 13 and audio-out port 12 which respectively use standard audio-in plug 15 and audio-out plug 14. This is quite distinct from the aspects of the present invention to which pending claims of drawn, all of which specifically recite the use a *single* pin for both the input *and* output signals.

This distinction is reflected in all of the in all of the pending independent claims. In claims 4, 8, 11, and 12, this is stated as:

an output circuit *coupled to the first terminal*, wherein the output circuit applies *to the first terminal* an analog output signal to drive the speaker;
an input circuit *coupled to the first terminal*, wherein the input circuit processes an input signal from the speaker *via the first terminal*

where the emphasis has been added. Similarly, claim 17 has the limitation, where the emphasis is again added, of:

an output circuit coupled to *the input/output pin*, wherein the output circuit *applies to the input/output pin an output signal* representing a sound;
an activation circuit coupled to *the input/output pin* and the functional unit, wherein in response to *an input signal from the input/output pin*, the activation circuit activates the sound processing circuit;

In claims 20, 22, and 28 this feature is recited as:

creating a vibration in the speaker that causes the speaker to generate *an input signal to the terminal* of the sound processing circuit;
... and
in response to activating the functional unit, *generating an analog output signal from the functional unit through the terminal* to the speaker, wherein the output signal drives the speaker to produce a sound. [emphasis added]

In claim 29 as:

a write circuit coupled to the memory array and to the input/output pin, wherein the write circuit performs an input operation that includes writing to the memory

array a series of values representing an audio signal *received from the input/output pin*; and

a read circuit coupled to the memory array and to the input/output pin, wherein the read circuit performs an output operation that includes reading from the memory array and *supplying to the input/output pin* a series of values representing said audio signal. [emphasis added]

And in claim 34 as:

generating *an input signal to the terminal* of the sound processing circuit; and


in response to the input signal, *supplying from the sound processing circuit through the terminal to the speaker* an analog output signal derived from the audio input, wherein the output signal drives the speaker to produce a sound. [emphasis added]

All of the teachings of Yekutieli are specifically directed at the two pin arrangement shown in its Figures 1 and 2 based on distinct input and output ports 13 and 12, respectively. Nothing in the Yekutieli, either alone or in conjunction with the secondary references, teaches, implies, or suggests the uses of a single, bi-directional input/output pin of the embodiment to which all of the pending claims are directed. Consequently, a rejection of any of these independent claims under 35 U.S.C. 103(a) with Yekutieli as the primary reference is respectfully submitted to be in error.

A number of the dependent claims included additional limitations that the Applicant believes to make them further allowable over the prior art; however, to save room, this arguments will not be presented at this time.

For any of these reasons, reconsideration of the Office Action's rejection of claims 4-9, 11, 12, 17-27, and 29-36 is therefore respectfully requested, and an early indication of their allowability is earnestly solicited.

Respectfully submitted,


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